

IN THE CLAIMS

Applicant hereby presents the claims, their status in the application, and amendments thereto as indicated:

1. (Currently Amended) An image sensor for sensing the light of an image impinging thereupon and for translating the image into a standard television format, said image sensor comprising a plurality of pairs of light-detecting elements arranged in rows and columns ~~for generating respective analog signals in proportion to the intensity of the light impinging respectively on one of the light-detecting elements~~, characterized in that each pair of light-detecting elements comprises:

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(1) a first ~~photodiode~~ photo sensing means for generating analog signals in proportion to the intensity of the light impinging thereon;

(2) a second ~~photodiode~~ photo sensing means for generating analog signals in proportion to the intensity of the light impinging thereon;

(3) ~~at least one first~~ turn-on transistor means coupled to each of said first and second photodiodes ~~and having a gate~~ photo sensing means, wherein said first and second photodiodes photo sensing means in each pair of light-detecting elements are coupled in parallel in the column direction at a floating sensing point through said ~~at least one first turn-on transistor means~~, said first turn-on means being enabled by a first control line coupled thereto, such that analog signals acquired in said first and second photo sensing means of one of the same pairs are present at said floating sensing point in response to the enabling of said first control line; and

(4) translating means coupled to said floating sensing point for resetting the initial state of said floating sensing point and reading out said analog signals to a column line;

wherein said first and second ~~photodiodes~~ photo sensing means in adjacent pairs of light-detecting elements, respectively, are coupled in parallel in the column

~~direction such that said at least one turn-on transistors coupled to said first and second photodiodes are sequentially controlled by first and second gate control lines coupled to the gate of said at least one turn-on transistor, respectively and analog signals acquired in said first and second photodiodes of one of the same pairs and the adjacent pairs present at said floating sensing point in response to one of said first and second gate control lines, thereby enhancing the light sensitivity of said image sensor.~~

2. (Currently Amended) The image sensor of claim [[1]] 8, wherein said analog signals acquired in said photodiodes photo sensing means controlled by said first gate control lines constitute control line constitutes first field signals and said analog signals acquired in said photodiodes controlled by said second gate control lines constitute control line constitutes second field signals, wherein such that the components of said first field and second field signals are correlated with one another and the time difference thereof is less than 1/60 second, ~~thereby~~ improving the quality of said image displayed in a television.

3. (Original) The image sensor of claim 1, wherein said translating means further comprises an amplifier transistor for amplifying the analog signals presenting at said floating sensing point.

4. (Currently Amended) The image sensor of claim 1, wherein said translating means comprises a reset transistor for resetting the initial state of said floating sensing point in response to a reset signal and ~~a source-follower transistor and another turn-on transistor coupled to said column line.~~

5. (Currently Amended) The image sensor of claim 1, wherein said first turn-on means comprises at least one turn-on transistor ~~first and second photodiodes in each pairs of light detecting elements each connects to one turn-on transistor enabled by a specific gate control line such that said first and second photodiodes are coupled together at said floating sensing point in response to said specific gate control line.~~

6. (Currently Amended) The image sensor of claim ~~[[1]]~~ 8, wherein said second turn-on means comprises at least one turn-on transistor ~~first and second photodiodes in each pairs of light detecting elements each connects to two turn-on transistors means enabled by two different gate control lines such that said first and second photodiodes are coupled together at said floating sensing point.~~

7. (Currently Amended) A method for use in generating analog image signals ~~from an image sensor for sensing the light of an image impinging thereupon and for translating the image into a selected television format comprising a plurality of pairs of light detecting elements arranged in rows and columns for generating respective analog signals in proportion to the intensity of the light impinging respectively on one of the light detecting elements, each pair of light detecting elements comprising: a first photodiode, a second photodiode, at least one turn-on transistor coupled to each of said first and second photodiodes and having a gate, wherein said first and second photodiodes in each pair of light detecting elements are coupled in parallel in the column direction at a floating sensing point through said at least one turn-on transistor and translating means coupled to said floating sensing point for resetting the initial state of said floating sensing point and reading out said analog signals to a column line, wherein said first and second photodiodes in adjacent pairs of light detecting elements are coupled in parallel in the column direction, the method comprising the steps of:~~

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(1) providing an image sensor comprising a plurality of pairs of light-detecting elements arranged in rows and columns, each pair of light-detecting elements comprising a first photo sensing means, a second photo sensing means, at least one turn-on means coupled to each of said first and second photo sensing means, and translating means;

(1)(2) generating respective analog signals in proportion to the intensity of the light impinging on respective one of the light-detecting elements;

~~(2) sequentially enabling the gates of said first gate control lines and then the gates of said second gate control lines; and~~

(3) coupling said first and second photo sensing means in each pair of light-detecting elements in parallel in the column direction at a floating sensing point, through a first turn-on means enabled by a first control line;

(4) coupling said first and second photo sensing means in adjacent pairs of light-detecting elements in parallel in the column direction at said floating sensing point, through a second turn-on means enabled by a second control line;

(5) alternately enabling said first and second control lines; and

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(3)(6) obtaining said analog signals acquired in said first and second photodiodes of one of the same pairs and or the adjacent pairs presented at said floating sensing point, in response to the enabling of one of said first and or second gate control lines, respectively.

8. (New) The image sensor of claim 1 further including second turn-on means coupled to said first and second photo sensing means in adjacent pairs of light-detecting elements, respectively, said second turn-on means being enabled by a second control line coupled thereto, such that analog signals acquired in said first and second photo sensing means of one of said adjacent pairs are present at said floating sensing point of one of said adjacent pairs in response to the enabling of said second control line.

9. (New) The method of claim 7, after the providing step and before the generating step, further comprising the step of resetting the initial state of said floating sensing point via said translating means in response to a first reset signal received by said translating means.

10. (New) The method of claim 9, further comprising the step of (g) reading out said analog signals in response to a read out signal received by said translating means.

11. (New) The method of claim 10, further comprising the step of (h) resetting the initial state of said floating sensing point in response to a second reset signal received by said translating means.

12. (New) The method of claim 11, wherein the exposure time of each of the first and second photo sensing means is defined by the duration between said first reset signal and said second reset signal, and each of said first and second control lines is maintained at a logic high level for at least the exposure time.

13. (New) The method of claim 12, wherein each of said first and second control lines is enabled by a control signal leading said first reset signal by a first predetermined time to ensure that said first or second turn-on means is enabled before said first reset signal, and said read out signal leads said second reset signal by a second predetermined time to ensure that an access transistor of said translating means is activated before said second reset signal.

14. An arrangement of light-detecting elements, each light-detecting element comprising:

(1) a first and a second photo sensing means for generating analog signals in proportion to the intensity of the light impinging thereon;

(2) a first turn-on means coupled to each of said first and second photo sensing means of one light emitting element, wherein said first and second photo sensing means of said light-emitting element are coupled in parallel at a floating sensing point through said first turn-on means; and

(3) a second turn-on means wherein said first and second photo sensing means of adjacent light-emitting elements, respectively, are coupled in parallel at said floating sensing point of one of said adjacent light-emitting elements through said second turn-on means.

15. (New) The arrangement of light-detecting elements of claim 14 wherein each light-emitting element further comprises:

(4) translating means coupled to said floating sensing point for resetting the initial state of said floating sensing point and reading out said analog signals to a column line.

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cancel* 16. (New) The arrangement of light-detecting elements of claim 15 wherein said translating means further comprises an amplifier transistor for amplifying said analog signals presenting at said floating sensing point.

17. (New) The arrangement of light-detecting elements of claim 15, wherein said translating means comprises a reset transistor for resetting the initial state of said floating sensing point in response to a reset signal.
